

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		11164
INTERNATIONAL APPLICATION NO. PCT/DE00/01604	INTERNATIONAL FILING DATE May 17, 2000	U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 09/937952
		PRIORITY DATE CLAIMED 05/18/1999 199 22 676.8

TITLE OF INVENTION

METHOD FOR THE SERIAL PICKING UP OF POUCHES

APPLICANT(S) FOR DO/EO/US

Peter KALISCH; Wolfgang SCHUTZ; Meinhard PROTZ

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
 - a. is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. has been transmitted by the International Bureau.
 - c. is not required, as the application was filed in the United States Receiving Office (RO/US).
6. A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. A copy of the International Search Report (PCT/ISA/210).
8. Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
 - a. are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. have been transmitted by the International Bureau.
 - c. have not been made; however, the time limit for making such amendments has NOT expired.
 - d. have not been made and will not be made.
9. A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
10. An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
11. A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

Items 13 to 20 below concern document(s) or information included:

13. An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. A **FIRST** preliminary amendment.
16. A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. A substitute specification.
18. A change of power of attorney and/or address letter.
19. Certificate of Mailing by Express Mail
20. Other items or information:

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 091937952	INTERNATIONAL APPLICATION NO. PCT/DE00/01604	ATTORNEY'S DOCKET NUMBER 11164																			
21. The following fees are submitted:		CALCULATIONS PTO USE ONLY																			
BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :																					
<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1,000.00 <input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$710.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00																					
ENTER APPROPRIATE BASIC FEE AMOUNT =		\$860.00																			
Surcharge of \$130.00 for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492 (e)).		<input type="checkbox"/> 20 <input type="checkbox"/> 30 \$0.00																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CLAIMS</th> <th>NUMBER FILED</th> <th>NUMBER EXTRA</th> <th>RATE</th> </tr> </thead> <tbody> <tr> <td>Total claims</td> <td>8 - 20 =</td> <td>0</td> <td>x \$18.00 \$0.00</td> </tr> <tr> <td>Independent claims</td> <td>1 - 3 =</td> <td>0</td> <td>x \$80.00 \$0.00</td> </tr> <tr> <td colspan="2">Multiple Dependent Claims (check if applicable).</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">\$0.00</td> </tr> <tr> <td colspan="2" style="text-align: center;">TOTAL OF ABOVE CALCULATIONS =</td> <td style="text-align: center;">\$860.00</td> </tr> </tbody> </table>		CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	Total claims	8 - 20 =	0	x \$18.00 \$0.00	Independent claims	1 - 3 =	0	x \$80.00 \$0.00	Multiple Dependent Claims (check if applicable).		<input type="checkbox"/>	\$0.00	TOTAL OF ABOVE CALCULATIONS =		\$860.00	
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Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable).		<input type="checkbox"/> \$0.00																			
SUBTOTAL =		\$860.00																			
Processing fee of \$130.00 for furnishing the English translation later than months from the earliest claimed priority date (37 CFR 1.492 (f)).		<input type="checkbox"/> 20 <input type="checkbox"/> 30 + \$0.00																			
TOTAL NATIONAL FEE =		\$860.00																			
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).		<input type="checkbox"/> \$0.00																			
TOTAL FEES ENCLOSED =		\$860.00																			
		Amount to be: refunded \$ charged \$ 																			

A check in the amount of **\$860.00** to cover the above fees is enclosed.

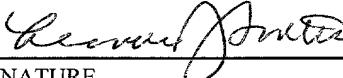
Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **04-1415** A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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REGISTRATION NUMBER
September 27, 2001
DATE

2/prt>

PATENT

ATTORNEY DOCKET 11164

METHOD FOR THE SERIAL PICKING UP OF POUCHES**BACKGROUND OF THE INVENTION**

This invention relates to a method for picking up and handling filled and sealed, rectangular bags or film packs, also known as pouches, which have a bottom side provided with a bottom fold and two longitudinal sides. In the sense of the present invention the term "handling" relates to any random conveying, supplying, 5 transferring, sorting, intermediate storing, etc.

The invention is in the field of the manufacture and further processing of pouches filed with (animal) foods. The previously manufactured tubular pouches are filled in special filling and sealing mechanisms with an ingredient or component and are then closed and sealed and subsequently usually undergo a sterilization before the finished 10 products are packed.

Since it has proved advantageous for various reasons for the pouches to stand during sterilization on one of the longer lateral edges or longitudinal sides, i.e., with a main extension plane containing the pouch lateral edges being substantially vertical and the longer lateral edges substantially horizontal, the problem arises of simultaneously 15 reliably mechanically gripping or picking up a plurality of parallel pouches arranged in a row, in order to hold the pouches or perform a handling movement therewith.

BRIEF SUMMARY OF THE INVENTION

The invention solves this problem by a method for picking up and handling filled and sealed, rectangular pouches, which have a bottom side and two longitudinal sides and are provided on the bottom side with a bottom fold. The pouches, standing on one of

the longitudinal sides are arranged in parallel and in a row and are in each case picked up on an opposite (upper) longitudinal side with a gripper mechanism having comb-like, finger-like gripper elements. The gripper elements are movable between the upper longitudinal sides of adjacent pouches. The gripper elements are moved in the 5 longitudinal direction of the upper longitudinal sides from the bottom side and pass the latter between adjacent longitudinal sides.

Through the combination of two essential measures, namely the arrangement of the pouches standing or lying on one longitudinal side and the introduction or "threading" movement of the gripper mechanism taking place from the side, a much more reliable 10 picking up of the bag edge occurs than in the case of a picking up movement from above, even if, as a result of a preceding heat treatment, the bag edge may be slightly folded around or bent down.

It is possible to simultaneously grip a row of 5 to 100 or more pouches. The spacing between adjacent pouches in a row can be less than the thickness of a single pouch, 15 i.e., the pouches can be juxtaposed virtually with no gap.

It is appropriate for the pouches to be gripped in clamping manner, i.e., for the gripper mechanism to have for each pouch to be picked up a pair of gripper jaws, where at least one is movable or has a movable element or between which a longitudinal side of a pouch can be gripped in clamping manner. Alternatively, the longitudinal sides 20 of the pouches can be engaged by vacuum.

Preferably, the pouches are gripped in an orientation in which a main extension plane containing the lateral edges of the pouches is inclined to the vertical by an angle of less than 60°. The main extension plane is preferably arranged in a substantially vertical manner. Appropriately, the longitudinal side on which each pouch stands is 25 horizontally oriented.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described in greater detail hereinafter relative to an embodiment and with reference to the attached drawings, wherein:

Figure 1 is a diagrammatic, perspective view of the essential components of a known pouch with bottom fold.

Figure 2 is a cross-sectional view of a pouch according to Figure 1 in the collapsed state.

5 Figure 3 is a cross-sectional view of a filled, sealed pouch according to Figure 1.

Figure 4 is a highly diagrammatic, perspective view of a device for picking up a row of pouches.

DETAILED DESCRIPTION OF THE INVENTION

With initial reference to Figure 1, the construction of a known pouch, e.g., for animal foods will be explained. The pouch 10 essentially comprises two lateral films 1, 2

10 with a rectangular base shape and which receive between them in their lower or bottom area a U-shaped folded bottom film. An upper sealing seam 4, lateral sealing seams 5 and 6, as well as two bottom sealing seams 7 are used for forming a closed pouch interior and a reinforced bottom section, which apart from an increased pouch capacity has the advantage that the pouch is stable in the filled state.

15 Figures 2 and 3 illustrate the cross-sectional shape of an empty pouch and one filled with a product 11.

During the manufacturing process of completely filled and sterilized pouches they must generally be introduced into, and removed from, suitable carrier mechanisms.

For the extensive automation of the manufacturing process use is made for the
20 removal of all the pouches in a carrier mechanism of a gripper mechanism. The carrier mechanism has a plurality of juxtaposed gripper elements, whose number corresponds to that of the pouches to be picked up and whose reciprocal spacing also coincides with the given spacing of the pouches in the carrier mechanism.

Figure 4 diagrammatically shows such a comb-like gripper mechanism 20, which has
25 a row of finger-like gripper elements 22. As shown in Figure 4, for each of the pouches 10 held in a carrier mechanism (not shown in a detailed manner) there is a

pair of gripper elements 22, which are appropriately fitted to a gripper carrier 25. The gripper elements 22 (or in each case one pair) are movable and may be operated by compressed air. Alternatively in one or two gripper elements of a pair is an extensible piston or some other clamping element is provided to grasp the lateral edge of a pouch

5 to be picked up in a clamping manner.

According to the invention, the gripper mechanism 20 is moved in the direction of the arrow 26 in a linear manner to the pouches 10. The gripper elements 22 are level with the upper lateral edges or longitudinal sides 13 of the pouches 10. According to the invention, the pouches 10 for the picking up or "threading" movement of the gripper

10 mechanism 20 are arranged so that the bottom sides 14 of the pouches are directed towards the gripper mechanism 20. From the bottom side, the gripper elements 22 initially move past the corner (pointing to the top right in Figure 4) between the bottom side 14 and longitudinal side 13 and then over or alongside the upwardly standing longitudinal sides 13, so that an adequate part of the longitudinal side 13 can

15 be engaged. The tendency of the bottom side 14 or longitudinal side 13 in the vicinity of the bottom side 14 to fold round is much less than on a pouch top side 16 opposite to the bottom side 14. Thus a much more reliable gripping of the longitudinal side 13 is achieved, even if the latter is zonally bent or folded round, as compared with a movement of the gripper mechanism 20, where it is lowered from above or is

20 "threaded" from the side 1 opposite to the bottom side 14.

WHAT IS CLAIMED IS:

1. A method for picking up and handling filled, sealed rectangular pouches which have two longitudinal sides and a bottom side with a bottom fold and where the pouches are positioned standing on one of the longitudinal sides and being arranged in parallel array with facing longitudinal sides comprising picking up said pouches with a gripper mechanism having a comb-like gripper elements with said gripper elements being moved between the sides of adjacent pouches in a longitudinal direction past the bottom sides of the pouches between adjacent longitudinal sides of the pouches.
5
2. The method according to claim 1 wherein a row of 5 to 100 pouches is simultaneously gripped.
10
3. The method according to claim 1 wherein the distance between adjacent pouches in a row is smaller than the thickness of a single pouch.
4. The method according to claim 1 wherein the pouches are gripped in clamping manner.
15
5. The method according to claim 1 wherein the pouches are gripped by vacuum.
6. The method according to claim 1 wherein the pouches are gripped in an orientation where a main extension plane containing the lateral edges of the pouches is inclined to the vertical by an angle of less than 60°.
- 20
7. The method according to claim 6 wherein the main extension plane is substantially vertical.
8. The method according to claim 1 wherein the longitudinal side on which each pouch stands has a horizontal orientation.

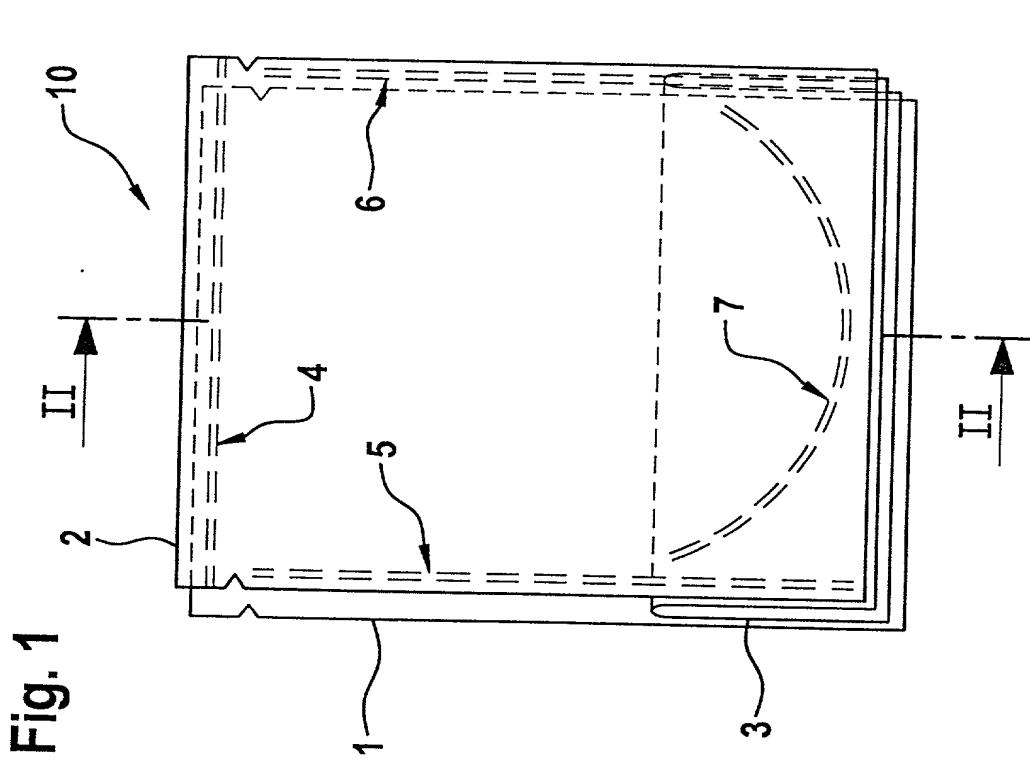


Fig. 2

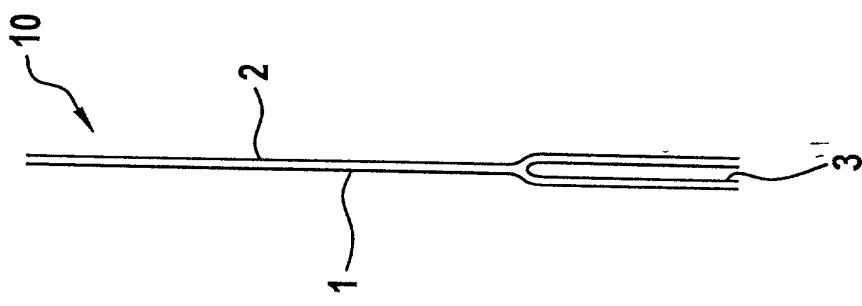
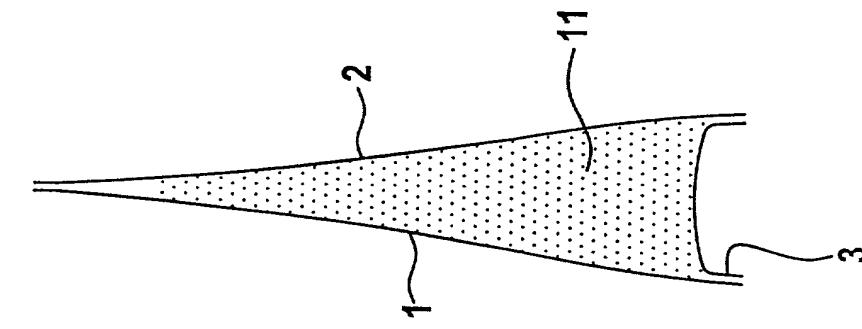


Fig. 3



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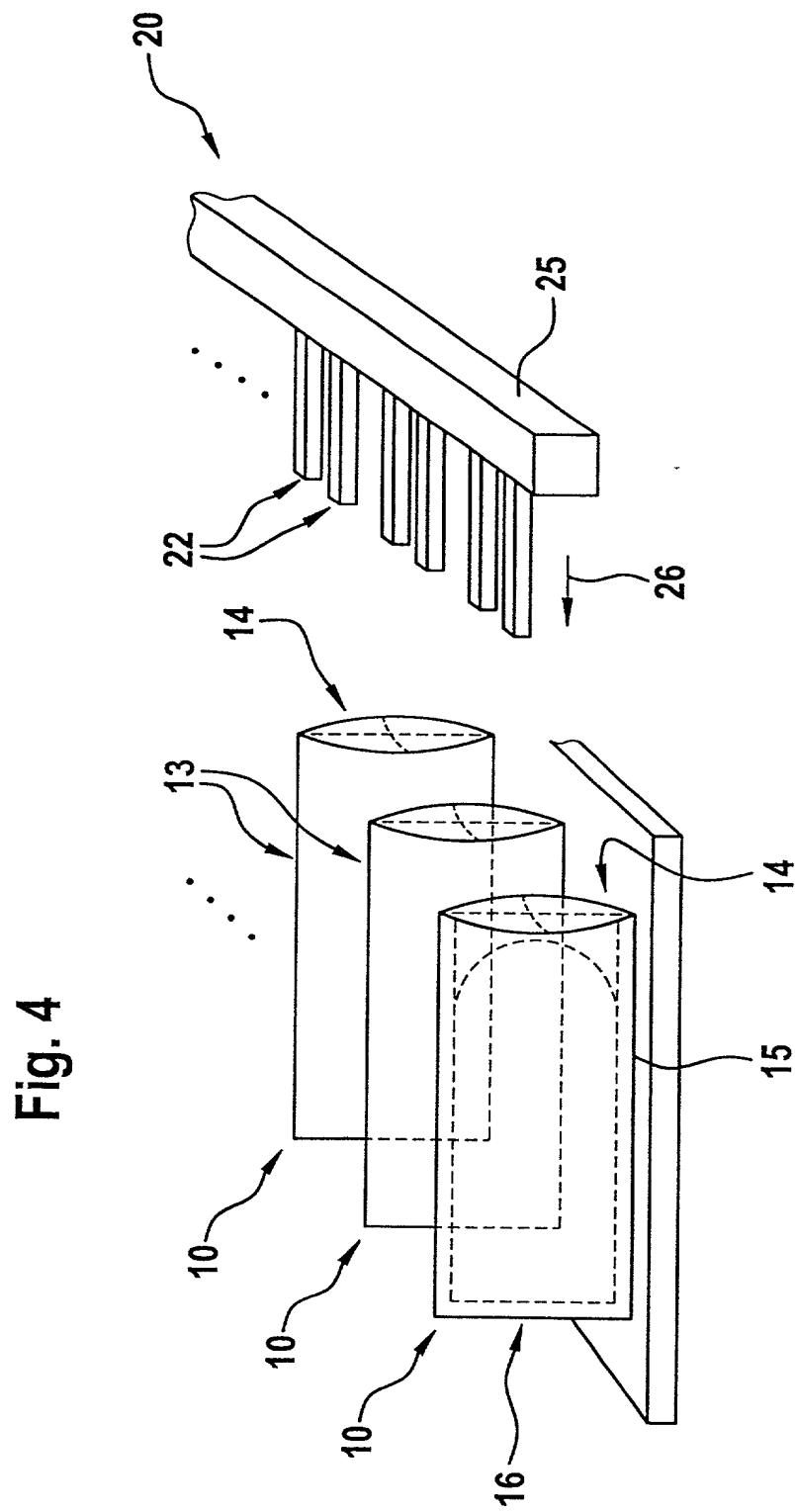


Fig. 4

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

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Send Correspondence to:

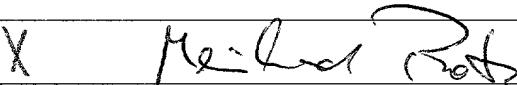
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